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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,257	05/08/2007	Hitoshi Akiyama	Q94348	8801

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EXAMINER	
MAKI, STEVEN D	

ART UNIT	PAPER NUMBER
1791	

NOTIFICATION DATE	DELIVERY MODE
06/24/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/575,257	AKIYAMA, HITOSHI	
	Examiner	Art Unit	
	Steven D. Maki	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *041006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1) The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2) Claims 1 and 3-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1 lines 3-4, there is no antecedent basis for "the traveling direction" and "the vehicle" and as such the scope of claim 1 is unclear.

As to claims 3, 4 and 6, there is no clear antecedent basis for "the tread".

Claim 5 ambiguously refers to "the short pitched lugs" (tread lugs which define a short pitch?).

In claim 7 lines 3, there is no antecedent basis for "the traveling direction" and "the vehicle" and as such the scope of claim 7 is unclear.

As to claim 7, it is uncertain how many tread lugs are required because claim 7 recites "at least one tread lug" (line 4) and "the tread lugs" (line 6); it being noted that there is no antecedent basis for "the tread lugs" on line 6 of claim 7.

As to claims 7, 8, 10, 11, 13 and 14, there is no clear antecedent basis for "the tread". For example, see line 3 of claim 7.

Claim 12 ambiguously refers to "the short pitched lugs" (tread lugs which define a short pitch?).

In claim 15 line 3, there is no antecedent basis for "the traveling direction" and "the vehicle" and as such the scope of claim 15 is unclear (lines 4-5).

In claims 16-19, there is no clear antecedent basis for "the tread".

In claim 15, there is no clear antecedent basis for "the tread" in the phrase "right and left areas of the tread and angled".

3) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5) **Claims 7-9 and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Hoffmeister (US 5,769,990).**

Hoffmeister, directed to the problem of noise and vibrations produced by a tread of a tire, discloses a pneumatic tire having a tread comprising blocks separated by circumferential grooves and lateral grooves. The blocks may be arranged in four block rows comprising a pair of shoulder block rows and two central block rows. Adjacent blocks in each row each define a pitch. Hoffmeister teaches making the tire tread using at least one variable pitch length band. Hoffmeister teaches using two variable pitch length bands wherein, for example, one pitch band has a pitch length A at one end and a pitch length B at the other end and another pitch length band has a pitch length C at one end and a pitch length D at the other end. See Figure 10. The lengths of the

pitches are as follows: A < B < C < D. In the figure 10, embodiment, the variable pitch length tread band changes pitch length within the center circumferential groove and the blocks on one side are offset relative to the blocks on the other side. Since the shoulder blocks only extend between a tread end and outer circumferential groove, the shoulder blocks on the left side area cannot overlap with the shoulder blocks on the right side area. It is noted that invention Figure 10 is a directional tread pattern and that prior art Figure 9 is a non-directional tread pattern. Hoffmeister teaches that the variable pitch length band may have symmetrical features 60, 61 (Figure 5) or asymmetrical features 62, 63 (Figure 6). See col. 6 lines 29-43. Hoffmeister also teaches using a single variable length tread band to obtain two pitch length changes on each side of the tire tread. See col. 7 lines 7-17, col. 8 lines 28-38. When one variable pitch length band is used, **the band has a shortest pitch length S at one end a longest pitch length L at the other end.** In other words, the largest interval of the blocks on one of the right and left areas of the tread corresponds to the smallest interval of the blocks on the other of the areas. Furthermore, Hoffmeister teaches that a constant length pitch band may be used with a variable length pitch band. See col. 8 lines 34-36. The use of one variable pitch length band inherently results in a tread in which the contact area on the left side is the same as the contact area on the right side.

As to claims 7-9 and 11-13, the claimed tread pattern is anticipated by Hoffmeister. **The term "tread lug" reads on --shoulder block--.** As to claim 9, the selected pitches may be long and short. In claim 12, "substantially no space defined

therebetween" is a relative expression and fails to define a spacing (e.g. in millimeters) of the tread lugs different from that disclosed by Hoffmeister.

6) **Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hoffmeister (US 5,769,990) in view of Fontaine et al (US 4,546,808).**

As to claim 8, it would have been obvious to one of ordinary skill in the art to provide Hoffmeister's tread such that total areas of the contact patches of each of the right and left areas of the tread are substantially equal to each other since Fontaine et al teaches avoiding a disadvantage of an asymmetrical tread pattern by selecting the widths of the grooves such that the ratio of groove area to tread area on the inside and outside portions of the tread are substantially equal.

7) **Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hoffmeister (US 5,769,990) in view of Tagashira et al (US 5,679,186).**

As to claim 14, it would have been obvious to one of ordinary skill in the art to provide Hoffmeister's lateral grooves such that they are inclined at about 30 degrees with respect to the width direction of the tread (the blocks thereby being angled at about 30 degrees with respect to the width direction of the tread) since it is well known per se in the tire tread art to inclined lateral grooves of a block pattern tire tread at an angle of 0-45 degrees (e.g. 20 degrees) with respect to the axial direction as evidenced for example by Tagashira et al (col. 2 lines 58-62).

8) **Claims 1 and 3-19 rejected under 35 U.S.C. 103(a) as being unpatentable over Hoffmeister (US 5,769,990) in view of Evans (US 1,956,011) and Kogure (US**

5,027,875) and optionally further in view of at least one of Fontaine et al (US 4,546,808), Tagashira et al (US 5,679,186) and Lippmann et al (US 2,878,852).

Hoffmeister' is considered to anticipate claims 7-9 and 11-13. In any event and as to claims 1 and 3-19, it would have been obvious to one ordinary skill in the art to form Hoffmeister's tread such that it comprises a long pitch, middle pitch and short pitch since (1) it is well known / conventional in the tire tread art to use three different length pitches (long L, middle M and short S) as evidenced by Evans (pitch lengths 4-5-6 or 5-6-7 or 7-8-9) or Kogure (Figure 3C) and (2) Hoffmeister teaches that a constant width pitch band may be used with a variable width pitch tread band (col. 7 lines 8-18, col. 8 lines 28-38); one of ordinary skill in the art readily appreciating from the teachings of Hoffmeister's disclosure that use of two tread bands yields three pitch length changes.

Furthermore, it would have been obvious to one of ordinary skill in the art to arrange the pitches L, M and S as set forth in claim 1 (lines 9-12), claim 4, claim 10, claim 11, claim 15 (lines 8-11) and claim 17 since it is well known in the tread art to reduce noise of a tread using a sinusoidal pitch sequence (e.g. LMSMLMSMLMSML ...) as evidenced by Evans (7-8-9-8-7-8-9-8 ...) and optionally Lippmann et al's disclosure to reverse the pitch sequence on the left and right areas of the tread (Figure 10).

As to claims 1, 8 and 16, it would have been obvious to one of ordinary skill in the art to provide Hoffmeister's tread such that total areas of the contact patches of each of the right and left areas of the tread are substantially equal to each other since Fontaine et al teaches avoiding a disadvantage of an asymmetrical tread pattern by

selecting the widths of the grooves such that the ratio of groove area to tread area on the inside and outside portions of the tread are substantially equal.

As to claims 5, 14, and 19, it would have been obvious to one of ordinary skill in the art to provide Hoffmeister's lateral grooves such that they are inclined at about 30 degrees with respect to the width direction of the tread (the blocks thereby being angled at about 30 degrees with respect to the width direction of the tread) since it is well known per se in the tire tread art to inclined lateral grooves of a block pattern tire tread at an angle of 0-45 degrees (e.g. 20 degrees) with respect to the axial direction as evidenced for example by Tagashira et al (col. 2 lines 58-62).

Remarks

9) The remaining references are of interest.

10) No claim is allowed.

11) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Steven D. Maki/
Primary Examiner, Art Unit 1791

Steven D. Maki
June 19, 2010